

## RECORDS AND DESCRIPTIONS OF NEOTROPICAL CRANE-FLIES (TIPULIDÆ, DIPTERA), XVIII

BY CHARLES P. ALEXANDER

AMHERST, MASSACHUSETTS

The preceding part under this title was published in March, 1944 (JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY, 52: 45-57). The species discussed at this time are chiefly from Costa Rica, Panama and Bolivia, derived from sources that are mentioned under the individual species. The types of the novelties are preserved in my private collection of these flies, except where stated to the contrary.

### Genus *Tanypremna* Osten Sacken

*Tanypremna* (*Tanypremna*) *saltatrix* new species.

Size large (length, male, over 30 mm.); mesonotal præscutum with disk almost covered by four reddish brown stripes, the usual interspaces darkened and impressed; thoracic pleura yellow, with a narrow interrupted transverse girdle extending from the præscutum to the sternopleurite; tibiæ with a conspicuous white ring about its own length before tip; basal four tarsal segments black with broad white tips; wings subhyaline, the veins seamed with pale brown; cell *Sc*<sub>2</sub> small and narrow, tending to become closed at margin; male hypopygium with the dististyle provided with 13 or 14 small black spines arranged in a single row.

MALE.—Length about 33-34 mm.; wing 18.5-19 mm.; abdomen alone about 28-29 mm.

Frontal prolongation of head yellow; palpi greenish yellow. Antennæ with scape and pedicel yellow; flagellar segments pale brown, the outer ones darker; segments cylindrical, the verticils longer than the segments. Head chiefly yellow sericeous, darker behind.

Pronotum conspicuously blackened above, paling to yellow on sides. Mesonotal præscutum with the disk almost covered by four reddish brown stripes that are very narrowly separated by capillary black lines, the ones delimiting the usual interspaces impressed; a dark transverse line on præscutum extending from cephalic end of lateral stripe to the lateral margin, interrupting the broad yellow lateral and humeral border; scutal lobes reddish brown, divided into two unequal areas by narrowly blackened borders and lines; scutellum testaceous brown; mediotergite dark brown, the central portion behind somewhat paler; lateral border of mediotergite and dorsal portion of katapleurotergite pale, the remainder of pleurotergite dark brown. Pleura yellowish white, with a more or less interrupted transverse girdle extending from the

lateral præscutal border, as above described, crossing the dorsopleural membrane, on the anepisternum and sternopleurite being broken into linear spots. Halteres with stem obscure yellow, knob dark brown. Legs with coxæ yellow, outer face of each with a brownish black stripe, broadest on posterior coxæ; trochanters yellow; fore and middle legs with femora yellow basally, passing into dark brown, most intense at outer ends but preceded by a very vague paler subterminal ring; tibiæ black, with a relatively narrow but conspicuous white ring about its own length from tip; fore tibiæ with extreme bases vaguely whitened; basitarsi black with the tips white, on fore legs involving about the distal fourth, on the middle legs a little less; succeeding three tarsal segments black with their tips broadly white; terminal segment uniformly brownish black; posterior legs similar but with the white rings on tibiæ and basitarsi even wider, the latter including almost the outer third of segment. Wings subhyaline, the small stigma dark brown; cell *Sc* and seams along most of veins paler brown, these seams wider and more diffuse on the posterior and caudal veins. Venation: Cell *Sc*<sub>2</sub> very small and narrow, in holotype closed at margin by approximation of veins *Sc*<sub>2</sub> and *R*<sub>1+2</sub>; *Rs* straight and oblique, in alignment with *R*<sub>4+5</sub>; cell 1st *M*<sub>2</sub> about one-half wider than long, narrower at outer end; cell *M*<sub>1</sub> about twice its petiole; *m-cu* subequal to basal section of *M*<sub>3+4</sub>; cell 2nd *A* relatively wide.

Abdomen elongate; tergites brown, on more proximal segments narrowly ringed with obscure yellow; outer segments more uniformly darkened; pleural membrane dark; sternites yellow, their posterior borders darkened; eighth and ninth segments dark, the tips of basitarsi pale. Male hypopygium with tergal lobes broadly and obtusely rounded. Basistyle elongate; mesal face at near two-thirds the length with a conspicuous lobe that is provided with about a dozen long pale setæ. Dististyle provided with about 13 or 14 short blackened spines arranged in a single row, with more than half placed on the distal third of row; inner branch of style obtuse, provided with abundant short setæ.

Habitat.—Costa Rica.

Holotype, ♂, Rivas, altitude 2,875 feet, January 1939 (Dean Rounds). Paratype, ♂, Pedregoso, altitude 2,075 feet, January 1939 (Dean Rounds).

The nearest relatives of the present fly are the Brazilian *Tanypremna* (*Tanypremna*) *longissima* (Enderlein) and *T. (T.) manicata* Osten Sacken, both of which differ conspicuously in the relative proportions and in details of coloration of body and legs. These species have been keyed and described in an earlier paper by the writer (JOUR. N. Y. ENT. SOC., 22: 205-218, 1914).

***Tanypremna* (*Tanypremna*) *clotho* new species.**

Mesonotum very high and gibbous, dark brown, the sides broadly and abruptly yellow; pronotum narrowly darkened medially; pleura pale yellow;

mesosternum with a conspicuous black spot; legs black, tibiae with a broad white subterminal ring; tarsal segments one and two black basally, their tips broadly white; segments three and four white; wings pale brown, the costal region slightly darker; stigma and a cloud over cord darker brown;  $R_{2+3}$  sinuously bent; cell  $1st\ M_2$  large, square at base, narrowed outwardly; petiole of cell  $M_1$  about twice  $m$ ; cell  $2nd\ A$  unusually narrow; abdomen elongate, tergites chiefly dark brown, restrictedly patterned with obscure yellow; cerci black.

FEMALE.—Length about 41 mm.; wing 20 mm.; abdomen alone 36 mm.

Frontal prolongation of head short, almost white; nasus distinct; palpi pale, tinged with greenish, the proximal end of the terminal segment darker. Antennae with scape and pedicel pale, the basal flagellar segments greenish, outer segments dark brown; flagellar segments elongate, with conspicuous verticils. Front and anterior vertex silvery white; occiput and the transverse adjoining portions of vertex almost black, the remainder of vertex paling to brown; genae obscure yellow.

Pronotum conspicuously dark brown medially, the sides abruptly yellow. Mesonotal praescutum almost uniform dark brown, the area strongly narrowed in front to leave a very broad humeral and lateral area on either side; the four praescutal stripes differentiated by impressed lines at the interspaces; scutal lobes similarly dark brown, the median region sparsely yellow pollinose; scutellum testaceous brown, the parascutella darker; mediotergite chiefly dark brown, the lateral and posterior borders pale to form a U-shaped border; median region at base more reddened; pleurotergite dark brown, the posterior angle above the halteres abruptly yellow. Mesonotal praescutum high and gibbous. Pleura uniformly pale yellow; sternum pale except for a very evident oval black area on mesosternum. Halteres relatively long, stem brown, yellow at base, knob slightly brightened. Legs with coxae pale greenish yellow, the posterior pair with a brown spot on caudal aspect; trochanters greenish yellow, the middle pair blackened on posterior face; fore and hind femora brown, paler basally, darker brown at and before tips, middle femora uniform brownish black; tibiae brownish black, with a broad white subterminal ring, narrowest on fore legs where it is only a little more than twice the blackened apex, broad on middle and posterior tibiae, especially the latter, where the white is approximately four times the blackened apex; basitarsi black on proximal portion, the tip broadly white, involving about the distal two-thirds of segment, slightly less extensive on middle legs; tarsal segment two black at base, the tip white, broadest on fore legs where about the distal three-fourths to four-fifths of segment is included, narrower on middle and hind legs where more than half the segment is whitened, more extensively so on middle legs; tarsal segments three and four greenish white; terminal segment pale brown; claws (female) simple. Wings with a pale brownish tinge, the broad costal cell slightly darker, cell  $Sc$  even darker brown; stigma small, ill-defined, darker brown; a restricted brown cloud on cord and adjoining portions of outer radial veins; veins brownish black. Venation:  $Rs$  straight, subequal to  $R_{2+3}$  which is sinuously bent, narrowing

cell  $R_1$  at its outer end; vein  $R_{1+2}$  weak and pale, lying close to the free tip of  $Sc_2$ , which, in turn, is about the same distance from the spur of  $Sc_1$ ; cell  $R_3$  narrowed at about two-thirds its length; basal section of  $R_{4+5}$  almost lacking to punctiform,  $r-m$  likewise reduced; cell 1st  $M_2$  large, square at base, narrowed outwardly; petiole of cell  $M_1$  about twice  $m$ ;  $m-cu$  at near two-thirds the length of  $M_{3+4}$ ; cell 2nd  $A$  unusually narrow, its greatest width (opposite anal angle) about as long as petiole of cell  $M_1$  or somewhat shorter than  $m-cu$ .

Abdomen elongate, as shown by the measurements; basal tergites obscure yellow, narrowly darkened laterally, more broadly so dorsally, the amount of dark color increasing on outer segments; vague paler rings at near midlength of tergites two to five, inclusive; posterior borders of segments slightly darkened, the adjoining base of the succeeding segment restrictedly pale at the sides; basal sternites greenish yellow, the outer segments darker; genital shield brownish black. Ovipositor with long straight black cerci, their tips narrowly rounded.

Habitat.—Brazil.

Holotype, ♀, Palmeiras, Estado Rio de Janeiro, November 6, 1940 (Lopes).

The most similar species is *Tanypremna* (*Tanypremna*) *longissima* (Enderlein), likewise from southeastern Brazil. This differs in the larger size (Female, length 55 mm.; wing 22.5 mm.; abdomen alone 48.5 mm.), more especially the longer abdomen in proportion to the wing length. The latter fly is still not known to me except from the original description. From this it is indicated that the præscutum is directed more strongly forward over the head, completely concealing the latter when viewed from above. There are various discrepancies in color between the two flies, including the ovipositor, legs and wings, as the distinctly seamed veins of the outer fourth of the wing in *longissima*.

It is now very evident that there are numerous species of the subgenus in Tropical America, with an apparent concentration of forms in southeastern Brazil. The venation and the basic plan of structure of the male hypopygium indicates that the supposedly very distinct generic groups, *Ozodicera* Macquart, *Longurio* Loew and *Tanypremna* Osten Sacken are, in reality, all closely related and may well be found to pertain to a single major generic group. A very comparable case is found in *Limonia* Meigen, which rather curiously parallels the present condition. Thus, the conspicuously branched antennæ of *Ozodicera* are suggested by one of the subgeneric groups of *Tanypremna*, *Tanypremnodes* Alexander,

where the flagellar pectinations while short are perfectly distinct. The comparable condition in *Limonia* is to be found in the subgenera *Rhipidia* Meigen, *Idioglochina* Alexander, and *Zelandoglochina* Alexander. Furthermore, the delicate, ethereal build of species of *Tanyremna*, as compared to the stouter and more massive condition in *Ozodicera* and *Longurio*, is closely paralleled by various subgeneric groups of *Limonia*, as *Thrypticomyia* Skuse, *Doanomyia* Alexander, and *Euglochina* Alexander. It is of interest to note that the three typical Tipuline groups listed above have been placed in various tribes and subtribes within the Tipulinæ. The entire subject of genera and subgenera in the more primitive Tipuline crane-flies requires much further consideration and probably will result in a further reduction in the number of supposedly valid generic groups.

#### Genus *Holorusia* Loew

##### **Holorusia (Holorusia) furcifera** new species.

General coloration of mesonotal præscutum testaceous brown, with four more reddish brown stripes that are narrowly bordered with darker, especially the intermediate pair; antennæ (male) relatively long, about one-third the length of body or wing; basal flagellar segments bicolored; thoracic pleura uniformly pale yellow; femora yellow, the tips narrowly brownish black; wings weakly infuscated, with a more whitish central streak as far as the cord; costal border, outer radial field, *m-cu* and a spot in cell *R* brown; cell *1st M*<sub>2</sub> small, irregularly hexagonal; abdomen yellow, with a broad subterminal, dark brown ring; male hypopygium with the outer dististyle narrow, at near midlength bearing a slender lateral branch.

MALE.—Length about 14 mm.; wing 15 mm.; antenna about 5 mm.

Frontal prolongation of head obscure yellow, darker on ventral half; nasus long and conspicuous; palpi black, the terminal segment paling to brownish yellow. Antennæ (male) about one-third the length of body; scape, pedicel and first flagellar segment light yellow; succeeding segments bicolored, the proximal end darkened, with about the distal two-thirds of the more basal segments yellow, the latter color decreasing in amount on the outer segments, on the eighth and remaining segments becoming uniformly brown; flagellar segments cylindrical. Head medium brown, the front and very narrow orbits yellowish gray; a narrow but conspicuous dark brown median stripe on vertex.

Pronotum obscure brownish yellow. Mesonotal præscutum testaceous brown, with four more reddish yellow stripes, the intermediate pair more distinct, margined by narrow, slightly darker brown lines; humeral region slightly darkened, especially internally; scutal lobes chiefly reddish yellow, more obscure laterally; a narrow, darker brown, median vitta that extends onto the extreme cephalic portion of scutellum, the latter pale yellow; para-

scutella more infuscated; postnotum light yellow, the lateral border of mediotergite and the dorsal and posterior borders of pleurotergite somewhat darker. Pleura and most of pleurotergite clear light yellow. Halteres dark brown, the extreme base of stem narrowly yellow. Legs with coxæ and trochanters clear light yellow; femora and tibiæ yellow, their tips narrowly brownish black, the amount subequal on all legs; tarsi passing into black. Wings with the ground color weakly infuscated, variegated with conspicuous darker brown and restricted whitish subhyaline areas; the darker pattern includes especially the costal border, involving the prearcular field; outer radial field as far caudad as vein  $R_{4+5}$ ; areular areas; origin of  $Rs$ ;  $m-cu$ , and a conspicuous spot in cell  $R$  beyond midlength of vein  $M$ ; a whitened area in center of wing as far as cord, especially conspicuous across bases of anal and cubital cells,  $M$  and outer end of cell  $R$ , crossing the base of cell 1st  $M_2$ ; veins brown. Posterior border of wing with scattered black setæ interspersed with the marginal fringe, as common in genus. Venation:  $Rs$  a little less than twice  $m-cu$ , angulated at origin; vein  $R_{4+5}$  strongly arcuated at near midlength, constricting cell  $R_3$ ; cell 1st  $M_2$  small, irregularly hexagonal in outline;  $m-cu$  close to midlength to vein  $M_{3+4}$ ; cell  $M_1$  subequal in length to its petiole.

Abdomen yellow, the three subterminal segments brownish black; hypopygium yellow. Male hypopygium with the tergite narrowed outwardly, the lateral angles produced caudad into relatively narrow lobes, the mesal faces of which bear numerous black spinous setæ; median area of tergite notched, at base of emargination produced into a shorter lobe. Outer dististyle narrow, at near midlength bearing a conspicuous slender lateral branch. Inner dististyle with crest high, obtusely rounded; beak broad and obtuse.

Habitat.—Costa Rica.

Holotype, ♂, Pedregoso, altitude 2,075 feet, January 1939 (Dean Rounds).

The present fly is most similar to species such as *Holorusia* (*Holorusia*) *strangalia* Alexander, differing in the small size, details of coloration, and structure of the male hypopygium. The conformation of the outer dististyle is noteworthy.

### Genus *Tipula* Linnaeus

***Tipula* (*Eumicrotipula*) *votiva* new species.**

General coloration of mesonotum brownish gray, the præscutum with three brown stripes; pleura yellow dorsally, dark brown beneath; frontal prolongation of head yellow above, brownish black beneath; antennal flagellum black; femora with a narrow yellow subterminal ring; wings strongly and almost uniformly infuscated, restrictedly patterned with dark brown and obscure yellow.

MALE.—Length about 8 mm.; wing 8.7–9 mm.; antenna about 3.8–3.9 mm.

Frontal prolongation of head yellow above, abruptly brownish black on

sides and beneath; nasus distinct, yellow; palpi dark brown, the incisures pale. Antennæ (male) of moderate length; scape blackened on basal third to half, the remainder yellow; pedicel and flagellum black; flagellar segments scarcely incised, subcylindrical; verticils shorter than the segments. Head brown, more pruinose on front.

Pronotum yellow, the extreme lateral portions dark brown. Mesonotal præscutum brownish gray with three brown stripes that are best-delimited on posterior half of sclerite, especially the broad median stripe; lateral portions of præscutum darkened, including a velvety black spot on margin behind pseudosutural foveæ; scutum dark brown; scutellum and postnotum light brown, sparsely pruinose. Pleura dark brown ventrally, the color including the propleura, almost all of sternopleurite, and the meral region; dorsal pleurites, including the dorsopleural membrane, conspicuously yellow; dorsal anepisternum, posterior portion of sternopleurite and virtually all of the pteropleurite yellow; pleurotergite blackened, especially posteriorly. Halteres with stem yellow, knob brownish black. Legs with coxæ brownish black, sparsely pruinose; trochanters yellow; femora brownish black, brighter basally, with a narrow yellow subterminal ring that is placed more than its own length before the black tip; tibiæ and tarsi black. Wings with the ground very extensively and almost uniformly infuscated, sparsely patterned with obscure yellow and darker brown areas; cell *C* brown, slightly brightened subbasally; cell *Sc* yellow, with four major dark areas that are more extensive than the pale interspaces; more or less distinct creamy areas in prearcular field, beyond arculus in proximal ends of basal cells and as a very faintly indicated area beyond stigma in outer radial field; veins brown, yellow in the flavous portions. No macrotrichia in cells of wing. Venation:  $R_{1+2}$  entirely atrophied;  $R_2$  oblique, in direct alignment with  $R_1$  beyond the free tip of  $Sc_2$ ; petiole of cell  $M_1$  exceeding  $m$ ; cell *2nd A* narrow; venation of medial field very different in the two available specimens; in holotype normal for the subgenus, that is, with  $M_{3+4}$  present and with *m-cu* beneath cell *1st M*<sub>2</sub>; in the paratype, the venation is almost exactly as in the genus *Nephrotoma*, with *m-cu* uniting with vein  $M_4$  just before the base of cell *1st M*<sub>2</sub>.

Abdomen with basal tergites obscure yellow, beyond the first with the lateral borders conspicuously blackened, greatly restricting the amount of yellow; outer segments, including hypopygium, uniformly brownish black. Male hypopygium with the caudal margin of tergite nearly transverse, with a small U-shaped median notch, the lateral portions of the latter slightly produced into small lobes; lateral portions of tergal plate with long abundant setæ.

Habitat.—Bolivia.

Holotype, ♂, Buenavista, Santa Cruz (J. Steinbach). Paratopotype, ♂.

The most similar described species is *Tipula* (*Eumicrotipula*) *fatidica* Alexander, of Ecuador, which differs conspicuously in

the larger size, coloration of the body and wings, the short antennæ, and in the details of venation, as the much wider cell *2nd A.*

**Tipula (Microtipula) epione** new species.

Allied to *smithi*; mesonotal præscutum and scutum almost uniformly reddish brown; antennæ (male) elongate, yellow, the flagellar segments weakly bicolored; halteres infuscated; legs yellow; wings weakly infuscated, the ground color of outer half of wing more whitish hyaline, heavily patterned with brown, including the broad costal border and outer radial field;  $R_{1+2}$  entire; male hypopygium with a single dististyle, its inner angle bearing two or three strong black spinous setæ; lobe of ninth sternite a depressed-flattened quadrate plate, with its apex truncated; eighth sternite with posterior border evenly rounded.

MALE.—Length about 12 mm.; wing 12 mm.; antenna about 7.5 mm.

Frontal prolongation of head brown; nasus stout; palpi brown, the outer segments a trifle darker. Antennæ (male) elongate, exceeding one-half the length of wing; basal three segments yellow; succeeding segments very weakly bicolored, brownish yellow, the small basal enlargements a little darker brown; segments almost cylindrical; verticils much shorter than the segments. Head brownish gray; anterior vertex at widest point a little exceeding twice the diameter of scape, more narrowed behind between the large eyes.

Præscutum and scutum almost uniformly reddish brown, without markings; scutellum and postnotum more testaceous yellow, parascutella darker. Pleura obscure yellow. Halteres infuscated. Legs with the coxæ and trochanters yellow; remainder of legs yellow, the outer tarsal segments infuscated; claws somewhat weakly toothed. Wings with the ground color weakly infuscated, more whitish hyaline in outer half, including vicinity of cord and outer medial field; a very heavy and conspicuous brown pattern, including the broad costal border which involves the prearcular region, cells *C* and *Sc*, all of *R* excepting the outer end, and virtually the whole outer radial field; conspicuous brown seams on *m-cu* and narrower ones at outer end of cell *1st M*<sub>2</sub> and fork of  $M_{1+2}$ ; veins pale, darker in the patterned areas. Squama with setæ. Venation:  $R_{1+2}$  entire; *Rs* relatively long, about one-third longer than *m-cu*, the latter at near midlength of  $M_{3+4}$ ; basal section of  $R_{4+5}$  very long, greatly reducing *r-m*; cell *1st M*<sub>2</sub> relatively long; cells  $M_1$  and *2nd A* wide.

Basal abdominal segments obscure yellow, beyond the second passing into brown; subterminal segments blackened, forming a narrow ring; hypopygium yellow. Male hypopygium with the ninth tergite long, narrowed posteriorly, the apex terminating in a broad flattened lobe that is gently emarginate, to produce two lobules, both set with conspicuous black setæ; ventral tergal appendage (tegmen) pale and fleshy. Dististyle single, appearing as a subquadrate plate, the outer angle produced into a conspicuous flattened obtuse lobe, its apical border narrowly blackened; inner angle less

produced, at apex bearing two or three long black spinous setæ, the largest of which is about two-thirds the total length of the style itself. Lobe of ninth sternite a depressed-flattened subquadrate plate, slightly widened outwardly, its apex truncated or with vague indications of a median notch, the surface densely setiferous. Ædeagus stout, terminating in a decurved hook-like projection. Eighth sternite extensive, the posterior border broadly rounded, provided with numerous long setæ.

Habitat.—Bolivia.

Holotype, ♂, Buenavista, Santa Cruz (J. Steinbach).

The present fly is most similar to *Tipula (Microtipula) intertemperata* Alexander, *T. (M.) smithi* Alexander, and *T. (M.) temperata* Alexander, differing from all in the structure of the male hypopygium. The wing pattern is generally similar in all of these species yet they differ among themselves in the presence or absence of major setæ on the squamæ. In other subgeneric groups of *Tipula* the squamal character has been deemed to be of primary importance in differentiating groups.

***Tipula (Microtipula) nicoya*** new species.

Allied to *perangustula*; size small (wing, male, about 10 mm.); mesonotal præscutum obscure brownish yellow with three black stripes; thoracic pleura yellow, with a narrow, transverse, black girdle occupying the mesepisternum; knob of halteres blackened; claws of male simple; wings with cells basad of cord brownish yellow, the prearcular and costal fields, together with the outer radial cells, strongly darkened; male hypopygium with the lateral lobes of both the ninth tergite and the eighth sternite broadly and obtusely rounded; outer dististyle a simple cylindrical blackened rod; ædeagus not subtended by a pair of spines.

MALE.—Length about 9 mm.; wing 10 mm.; antenna about 4 mm.

Frontal prolongation of head yellow; nasus short and stout; palpi brown. Antennæ relatively long, as shown by the measurements; scape and pedicel yellow; first flagellar segment yellowish brown; succeeding segments black, the incisures of the more proximal ones vaguely brightened; segments only weakly incised; verticils shorter than the segments. Head light brown; anterior vertex wide, approximately four times the diameter of scape, without tubercle.

Pronotum obscure yellow laterally, infuscated on central portion. Mesonotal præscutum with the restricted ground obscure brownish yellow, the surface polished, with three black stripes, the median one relatively narrow; posterior sclerites of notum almost uniformly blackened, the parascutella paler; pleurotergite yellow. Pleura yellow, with a conspicuous transverse brown girdle, extending from the cephalic end of the præscutal stripe which bends laterad to the margin, crossing the dorsopleural membrane and covering most of the mesepisternum. Halteres with stem yellow, knob blackened. Legs

with coxæ and trochanters yellow; femora obscure yellow, the tips rather conspicuously blackened; tibiæ obscure yellow, the tips narrowly darkened; tarsi yellowish brown to obscure yellow; claws simple. Wings with the cells basad of cord brownish yellow; prearcular field, cells *C* and *Sc*, stigma, and cells beyond anterior cord conspicuously infuscated, the last slightly less intense than the others; proximal portions of cells distad of posterior cord and very indistinct markings in bases of cells *R*<sub>3</sub> and *R*<sub>5</sub> brighter in color. Venation: *R*<sub>1+2</sub> entire but the distal end faint and without trichia; *R*s relatively short, arcuated at origin, subequal to *m-cu*; cell 2nd *A* very narrow, about as in *perangustula*.

Abdominal tergites obscure yellow on their basal portions, the caudal margins broadly black, especially on segments two and three, on the succeeding tergites the amount of black somewhat more restricted; lateral tergal borders darkened; a subterminal black ring; sternites chiefly yellow; hypopygium yellow. Male hypopygium in its general features much as in *perangustula* but differing in all details. Ninth tergite with the lateral lobes broadly and obtusely rounded, with a conspicuous median brush of setæ, in addition to the usual paired ventral tufts; these setæ are much more elongate and less spinous than in allied forms. Outer dististyle a simple, slender, cylindrical, blackened rod, its tip obtuse; setæ relatively short and inconspicuous. In *perangustula*, the style on distal half expanded into an elongate-triangular head, with long coarse setæ. Ædeagus without a pair of subtending slender spines, as in *perangustula*. Eighth sternite with the caudal margin conspicuously bilobed, each lobe obtusely rounded and provided with numerous very long pale setæ.

Habitat.—Costa Rica.

Holotype, ♂, Pedregoso, altitude 2,300 feet, January 1939 (Dean Rounds).

The specific name is that of an Amerind tribe inhabiting Costa Rica. The most similar described species is *Tipula* (*Microtipula*) *perangustula* Alexander, of Colombia and Venezuela, which differs especially in the hypopygial characters, as compared above.

#### Genus *Limonia* Meigen

***Limonia* (*Limonia*) *curraniana* new species.**

General coloration brown; anterior vertex silvery; antennal scape yellow, the remainder of organ black; mesonotum brown, with a conspicuous orange dorsomedian stripe; legs dark brown, the tips of the tibiæ and all tarsi with the exception of the terminal segment and proximal portions of basitarsi of fore and middle legs, white; wings strongly tinged with brown; ventral dististyle of male hypopygium without rostral spines.

MALE.—Length about 5 mm.; wing 6–6.2 mm.

Mouthparts very reduced; palpi small, black. Antennæ with the scape pale yellow, the remainder of organ black; flagellar segments gradually narrowed and more slender toward end, the terminal segment about one-half longer than the penultimate segment. Anterior vertex silvery, concave, the anterior vertex several times as wide as diameter of scape; posterior portions of head light brown.

Mesonotum brown, with a conspicuous orange dorsomedian stripe, extending from the anterior portion of the præscutum to the base of the mediotergite. Pleura yellow. Halteres dark brown. Legs with the coxæ and trochanters yellow; femora dark brown; tibiæ dark brown, the tips broadly white; fore and middle legs with the proximal half of basitarsi darkened, the remaining segments, with the exception of the last, white; posterior tarsi white. Wings strongly tinged with brown; stigma not indicated; costal region and barely perceptible seams along cord and over outer end of cell 1st  $M_2$  darker brown; wing apex insensibly darkened; veins dark brown. Venation:  $Sc_1$  ending just beyond midlength of  $R_s$ ,  $Sc_2$  at its tip; free tip of  $Sc_2$  in transverse alignment with  $R_2$ ; cell 1st  $M_2$  short and nearly square;  $m-cu$  at the fork of  $M$ , longer than the distal section of  $Cu_1$ .

Abdominal tergites dark brown, the basal sternites pale yellow; hypopygium dark. Male hypopygium with the ninth tergite transverse, its caudal border very gently emarginate. Basistyle with the ventromesal lobe extensive, very low and broad. Dorsal dististyle nearly straight, a little expanded before apex, thence narrowed into an acute beak. Ventral dististyle fleshy, the rostral prolongation elongate, gently curved, without evident rostral spines. Gonapophyses appearing as broadly flattened plates, the mesal-apical angle produced into a straight point.

Habitat.—Panama (Canal Zone).

Holotype, ♂, Barro Colorado, January 9, 1929 (C. H. Curran); type in American Museum of Natural History.

I take great pleasure in naming this fly in honor of Dr. C. Howard Curran, distinguished Dipterologist. The species is most nearly related to *Limonia* (*Limonia*) *capnora* Alexander, *L. (L.) lutzii* (Alexander) and other species but is readily distinguished by the coloration of the legs and wings and by the details of venation.

***Limonia* (*Limonia*) *mesotricha* new species.**

General coloration brown, the mesonotal præscutum and scutum variegated with brownish orange; rostrum small, yellow, palpi reduced in size; antennæ black throughout; front silvery; halteres elongate, black; legs black; wings narrowed at bases, strongly tinged with brown; macrotrichia in distal cells;  $R_2$  shortened, the free tip of  $Sc_2$  correspondingly lengthened; male hypopygium with the rostral prolongation of ventral dististyle unarmed with spines.

MALE.—Length about 5 mm.; wing 6 mm.

Rostrum small, yellow; palpi black, very reduced, apparently only 1-segmented. Antennæ black throughout; basal flagellar segments short-oval, the outer ones more elongate; terminal segment one-half longer than the penultimate; verticils elongate. Front silvery; posterior portion of head brownish fulvous.

Mesonotal præscutum with the three usual stripes obscure brownish orange, narrowly margined with brown; scutum with median area pale, the lobes obscure brownish orange, encircled by brown; scutellum dark brown, the median line a little paler; mediotergite with cephalic half brown, the caudal portion brightening to obscure yellow. Pleura obscure yellow. Halteres elongate, black throughout. Legs with the coxæ and trochanters yellowish testaceous; remainder of legs black, the extreme femoral bases restrictedly brightened. Wings strongly tinged with brown, the darker stigmal region restricted to a vague seam over the free tip of  $Sc_2$ ; vague darker seams over the veins, the centers of the cells paler; veins brown. Wings narrowed basally, long-petiolate; relatively sparse macrotrichia in apical cells from the stigma to cell  $M_1$ , inclusive, in most cases being restricted to rows in the centers of the cells. Venation:  $Sc$  long,  $Sc_2$  ending shortly before the fork of  $Rs$ ,  $Sc_1$  shorter than  $Sc_2$ ;  $Rs$  long, angulated at origin; vein  $R_1$  bent strongly caudad, at  $R_2$  approaching vein  $R_{2+3}$ , strongly reducing  $R_2$ , the free tip of  $Sc_2$  correspondingly lengthened;  $m-cu$  near the fork of  $M$ , longer than the distal section of  $Cu_1$ .

Abdominal tergites dark brown; sternites obscure brownish yellow; hypopygium chiefly brown, the subterminal segments paler. Male hypopygium with the lobes of tergite somewhat obliquely truncated. Basistyle with ventromesal lobe unusually extensive, occupying almost the entire mesal face of style. Dorsal dististyle straight, slender, the apex a little enlarged and curved into a short point. Ventral dististyle relatively small, fleshy, its rostral prolongation flattened, without evident spines. Gonapophyses pale throughout, the mesal-apical lobe slender.

Habitat.—Panama (Canal Zone).

Holotype, ♂, Barro Colorado, December 21, 1928 (C. H. Curran); type in American Museum of Natural History.

*Limonia (Limonia) mesotricha* is very different from all other regional members of the subgenus, particularly in the apically hairy wings. The course of vein  $R_1$ , with the accompanying shortening of vein  $R_2$  suggests the even more accentuated conditions found in *L. (L.) insularis* (Williston) and allies.

#### Genus *Gnophomyia* Osten Sacken

***Gnophomyia (Gnophomyia) podacantha* new species.**

General coloration black, the head polished, the mesonotum more opaque; anterior lateral pretergites light yellow; thoracic pleura with a broad black

dorsal stripe, the ventral pleurites paler, pruinose; metapleura and posterior coxæ yellow; halteres uniformly blackened; wings with a blackish tinge, the cord and vein *Cu* even more darkened;  $R_{2+3+4}$  only slightly elevated; cell 1st  $M_2$  long and narrow, very little widened outwardly; male hypopygium with the caudal border of tergite truncate, provided with a chiefly double row of approximately one hundred spinous setæ; cephalic end of mesal face of basistyle produced into a long-cylindrical lobe that terminates in two conspicuous black spines; both dististyles narrowed and pointed at their tips.

MALE.—Length about 5 mm.; wing 5.5–5.6 mm.

FEMALE.—Length about 5.5 mm.; wing 5.6–5.8 mm.

Rostrum and palpi black. Antennæ black throughout, relatively long; flagellar segments elongate, with verticils that are subequal to or slightly longer than the segments. Head black, more or less polished; anterior vertex broad, sparsely pruinose, provided with a low tubercle.

Pronotum black. Anterior pretergites light yellow, the posterior pretergites more obscure. Mesonotum black, the surface opaque by a very sparse pruinosity. Pleura with a broad black dorsal stripe, the ventral pleurites paler, pruinose, on the metapleura and meron paling to yellow. Halteres blackened. Legs with the coxæ dark brown, the posterior pair paling to yellow; trochanters testaceous brown; remainder of legs black, the femoral bases paler. Wings with a blackish tinge, the basal third slightly more brightened; stigma narrow, long-oval, dark brown; a slightly indicated infuscation along cord and vein *Cu*; veins dark brown, paler in the more basal fields. Venation:  $Sc_1$  ending nearly opposite the fork of  $R_{2+3+4}$ ; *Rs* short and oblique, in direct alignment with  $R_3$ ;  $R_{2+3+4}$  only slightly elevated;  $R_{2+3}$  about twice  $R_2$ ; branches of *Rs* extending generally parallel to one another for virtually all their lengths; cell 1st  $M_2$  long and narrow, only slightly widened outwardly, with *m-cu* at about one-third to two-fifths its length.

Abdomen, including hypopygium, black. Ovipositor with elongate cerci, these blackened basally, the distal half obscure yellow; hypovalvæ short, black. Male hypopygium with the tergite large, the caudal margin truncate, provided with a chiefly double row of long spinous setæ, there being approximately 100 or more such setæ; lateral tergal angles produced into lobes, with spinous setæ to their summits. Basistyle at cephalic end of mesal face produced into a long cylindrical lobe that bears two conspicuous black spines at summit, these slightly unequal in length and diameter. Outer dististyle a powerful, nearly straight blackened horn or spike that narrows gradually to the acute tip. Inner dististyle much smaller, broad at base, thence similarly narrowed to the nearly acute apex, before this with a few erect setæ.

Habitat.—Costa Rica.

Holotype, ♂, San Juan Miramar, Pacific slope, in cloud forest, altitude 3,500 feet, January 1939 (Dean Rounds). Allotopotype, ♀, pinned with type. Paratopotypes, 1 ♂, 3 ♀♀.

From other members of the subgenus that center around *maestitia* Alexander and allies, the present fly is readily told by

the very different male hypopygium, especially the armature of the basistyle which has suggested the specific name.

### Genus *Neognophomyia* Alexander

#### *Neognophomyia productissima* new species.

General coloration of mesonotum reddish yellow; thoracic pleura with a broad interrupted black dorsal stripe, the ventral pleurites pale; wings grayish yellow, with a brown seam on anterior cord; male hypopygium with the tergal spines unusually long and slender, entirely pale, at near midlength narrowed and produced into a long curved needle-like point; phallosome relatively narrow, its apex broadly obtuse to subtruncate.

MALE.—Length about 4.5–4.7 mm.; wing 4.6–4.8 mm.

Rostrum yellowish brown; palpi brown. Antennæ brown, the pedicel slightly brightened; flagellar segments subcylindrical, the outer ones passing into elongate-oval, with very long verticils. Head dark brown, more reddish brown on central portion of vertex; eyes large.

Pronotum obscure yellow above, darker on sides. Mesonotal præscutum shiny yellow, with poorly indicated, more reddish brown stripes, the lateral pair especially distinct, continued backward across the suture onto the scutal lobes; central portion of mesonotum, including the posterior portion of præscutum, scutum and most of scutellum and mediotergite more yellowish. Pleura and pleurotergite on dorsal portion with four disconnected black areas that form a broad broken stripe, these areas located on propleura, anepisternum, dorsal pteropleurite and pleurotergite; ventral pleurites more reddish yellow. Halteres with stem pale, knob weakly darkened. Legs with the coxæ and trochanters yellow, femora, tibiæ and proximal two tarsal segments yellow, the tips very faintly and vaguely darker; outer tarsal segments brownish black. Wings with the ground grayish yellow, the prearcular and costal fields clearer yellow; a relatively broad and conspicuous brown seam extending from the stigma across anterior cord to fork of *M*; much narrower seams on posterior cord and outer end of cell *1st M*<sub>2</sub>; veins brown, more yellowish in the brightened fields. Venation: *R*<sub>2</sub> placed shortly beyond one-third the length of petiole of cell *R*<sub>3</sub>; vein *R*<sub>4</sub> ending close to wing tip; cell *1st M*<sub>2</sub> rather conspicuously widened outwardly, its proximal end very narrow; *m-cu* at near one-third the length of cell.

Basal abdominal tergites broadly yellow medially, conspicuously brownish black on sides; fourth tergite paler than the adjoining ones; tergites five and six conspicuously blackened, seven and eight again pale; sternites chiefly yellow, the outer segments more darkened; hypopygium dark brown. Male hypopygium with the tergal spines unusually long and slender, entirely pale, at near midlength abruptly narrowed into a long curved needle-like point that is subequal in length to the basal section. Outer dististyle relatively short and stout, with about four long setæ at outer end, one apical in position. Inner dististyle short and stout, curved, at apex narrowed into a more sclerotized beak or point. Phallosome relatively narrow, its apex broadly obtuse to subtruncate.

Habitat.—Costa Rica.

Holotype, ♂, Pedregoso, altitude 2,500 feet, January 1939 (Dean Rounds). Paratopotypes, 1 ♂, pinned with type; 4 ♂♂, altitude 2,075–2,300 feet, January 1939 (Dean Rounds).

The most similar described species are *Neognophomyia panamensis* Alexander and *N. trinitatis* Alexander, which have the structure of the male hypopygium somewhat the same. The present fly is readily distinguished by the very unusual elongation of the so-called tergal spines.

### Genus *Erioptera* Meigen

***Erioptera (Symplecta) macroptera argentina* new subspecies.**

MALE.—Length about 3.5 mm.; wing 3.8–4 mm.

As in typical *macroptera* (Philippi), differing in the details of structure of the male hypopygium, especially the gonapophyses. Hypopygium with the outer dististyle only moderately expanded at apex, the latter with about a dozen teeth. Inner dististyle slightly longer, appearing as a flattened lobe that narrows gradually to the obtuse tip. Gonapophyses appearing as flattened blades that have about the same size and somewhat the same shape as the inner dististyle, the outer margin with numerous teeth, those toward the base longer and more conspicuous; upper surface of apophysis with smaller denticles. In typical *macroptera* (Chile), the apophyses appear as slender blades, the apical third glabrous and only about one-half as wide as the inner dististyle, the more basal portions of the apophysis with relatively few, very coarse teeth.

Habitat.—Argentina.

Holotype, ♂, Hornadita, Province of Jujuy, altitude 3,400 meters, November 30, 1919 (Vladimir Weiser). Paratypes, 1 ♂, 1 ♀, Bolson, Province of Catamarca, altitude 2,700–2,750 meters, March 7–9, 1924 (Weiser); 1 ♂, Province of Buenos Aires (C. Bruch).

The late Doctor Bruch (Physis, 17: 47; 1939) records the species *macroptera* from La Plata, Delta of the Paraná, Rio Negro and Mendoza. It is presumed that these further records, at least in part, pertain to the present subspecies. In an earlier paper, Bruch (l.c., 17: 26–28; 1939) provides a detailed account, with figures, of the immature stages of this same fly.